Claims:

In accordance with my invention, I claim:

1. A wheel rim formed of fiber reinforced plastic comprising.

the wheel has a structural portion and left and right braking surfaces;

said structural portion is formed predominantly of a high modulus fiber in a plastic matrix;

said braking surfaces are formed of strong, but more easily machinable fibers in a plastic matrix;

said high modulus fibers are aligned in laminations formed of a series of 0 - 45 - 90 degree alignments;

the wheel is formed in a shape of complex curvature having substantially uniform strength having a substantially uniform density.

the ratio of said fiber to said plastic in said wheel is substantially above 60%;

said wheel is formed of first and second substantially identical semicircular halves;

said first half has a first male plug at one end and a first female receptacle at the opposite end separated by an arc portion;

said first male plug has a first tapered neck portion;

said second half has a second male plug at one end and a second female receptacle at the opposite end separated by an arc portion;

said second male plug has a second tapered neck portion;

the wheel is assembled by matingly interconnecting and adhesively bonding said first male plug with said second female receptcle, and said second male plug

with said first female receptacle such that said first tapered neck portion tends to center said first male plug and preserve adequate adhesive coating, and said second tapered neck portion tends to center said second male plug and preserve adequate adhesive coating.

2. The wheel of claim 1, further comprising:

the wheel is formed with a tire well that extends between left and right apexes;

said apexes are slightly radiused;

said well is smoothly curved to receive a tire with a diameter of around one inch;

extending downwardly from said apexes are left and right braking surfaces;

said braking surfaces join left and right walls;

said left and right walls join at a spoke bed;

the curvature of said spoke bed and left and right walls substantially conforms to the trailing two thirds of an aerodynamic foil shape having a thickness of about 20 mm and a chord of about 40 mm;

said braking surfaces are substantially flat and slightly less than 20 mm across.

3. The wheel of claim 2, further comprising:

said tire well is formed of a first outer lamination and a first inner lamination, which first laminations overlap said apexes and extend under said braking surfaces.

4. The wheel of claim 3, further comprising:

said spoke bed and walls are formed of overlapped second inner lamination, second outer lamination and a first middle lamination;

said second laminations and said first middle lamination effectively form an all carbon fiber reinforced plastic sandwich with voids therebetween eliminated by the compaction process;

said second laminations and said first middle laminations form quasi-isotropic walls because of the directions of fiber orienation.

5. The wheel of claim 4, further comprising:

three 0 degree bundles of fibers are arranged aligned with the arc of the wheel at said spoke bed said left apex and said right apex.

6. The wheel of claim 3, further comprising:

said braking surfaces are machined to a high level of smoothness and trueness;

said braking surfaces are formed of a plastic matrix with fibers formed of materials that have greater toughness than carbon fiber;

said machined braking surfaces have a greater coefficient of friction with elastomeric caliper brake shoes than carbon fiber reinforced plastic surfaces.

7. The wheel of claim 3, further comprising:

said wheel rim is formed to have flanges to receive a clincher type tire.

8. A method of forming a bicycle wheel rim from laminations of fiber reinforced plastic resin comprising:

forming an uncured rim component layup with an outer layer from two mirror image semicircular shapes,

said shapes are butted at the bottom of the rim component;

arranging a bottom inner layer and bottom middle layer to bridge the joint between the two layers;

laying up braking surface laminations outward of said two layers;

positioning three "0 degree" bundles of fibers located, respectively, between the layers that form the spoke bed, between the layers that form the left apex and and between the layers that form the right apex of the rim section;

placing said layup in a mold;

applying pressure compressing said layers outwardly against said mold so that voids between said laminations are substantially eliminated;

curing said resin to result in a rim component.

9. The wheel forming method of claim 8, further comprising:

using a bladder to apply said pressure;

using pressure intensifiers to apply pressure from said bladder against said apexes.

10. The wheel forming method of claim 8, further comprising:

said rim component being a first rim component;

a second rim component being formed using the same method as sad first rim component;

forming said first rim component with a first integral projecting portion and a first receiving receptacle;

forming said second rim component with a second integral plug and a second receiving receptacle;

joining said first plug to said second receptacle and joining said second plug to said first receptacle to form a complete wheel rim.

11. The wheel forming method of claim 8, further comprising:

said resin is an epoxy resin;

substantially all of said fibers are carbon fiber.

12. The wheel forming method of claim 8, further comprising:

said resin is an epoxy resin;

said brake surfaces are formed from an epoxy resin with a substantial portions of said fibers being glass fibers;

substantially all of said fibers in all the layers except the layers forming said brake are carbon fiber.

13. The wheel forming method of claim 8, further comprising:

said first and second plugs each have a projecting arc portion and a tapered neck portion;

said projecting arc portion and a tapered neck portions fit corresponding machined shapes in said first and second receptacles

said necks providing a centering effect to insure precise alignment of the first and second rim components and maintain an adequate glue thickness.

14. The wheel forming method of claim 8, further comprising:

the overlapable layers have darts staggered such that they permit curvature to the three dimensional shape of laminations during the molding process;

said darts are spaced such that opposed darts will not be located immediately adjacent one another, thereby having a length of continuous fibers in at least one of the laminations; and

said laminations are formed so that as they are curved, the opposed edges of said darts will overlap one another, providing further fiber strengthening when compacted and cured in an epoxy matrix.

15. The wheel forming method of claim 8, further comprising:

said mold is formed of two halves defining a chamber;

a solid mandrel is placed in chamber to define the shape for tire well.

16. The wheel forming method of claim 8, further comprising:

said mold is formed of two halves defining a chamber;

a mandrel is placed in chamber to define flanges to receive a clincher type tire.